ICAO ENGINE nvPM EMISSIONS DATA SHEET

SUBSONIC ENGINES

ENGINE IDENTIFICATION:	PW1919G	BYPASS RATIO (-):	11.6
UNIQUE ID NUMBER:	04P20PW200	PRESSURE RATIO π_{oo} (-):	33.3
COMBUSTOR:	TALON X, Block-C		
ENGINE TYPE:	TF	RATED OUTPUT F_{oo} (kN):	92.8

REGULATORY DATA

CHARACTERISTIC VALUES:	LTO_{mass}/F_{oo} (mg/kN)	LTO_{num}/F_{oo} (particles/kN)	NVPM MASS CONCENTRATION ($\mu g/m^3$)
LTO/F_{oo} AND MAX $nvPM_{mass}$	8.5	3.81E+14	247
AS % OF CAEP/10 LIMIT	-	-	3.6
AS % OF CAEP/11 LIMIT (InP)	0.3	2.3	
AS % OF CAEP/11 LIMIT (NT)	1.4	5.1	

MEASURED DATA

MODE	POWER SETTING ($\%F_{oo}$)	TIME minutes	FUEL FLOW kg/s	EMISSIONS INDICES* EI_{mass} (mg/kg)	EI_{num} (particles/kg)	NVPM MASS CONCENTRATION PEAK $nvPM_{mass}$ ($\mu g/m^3$)
TAKE-OFF	100	0.7	0.650	8.1	1.87E+14	
CLIMB OUT	85	2.2	0.540	3.6	1.40E+14	
APPROACH	30	4.0	0.197	0.2	1.69E+13	
IDLE	7	26.0	0.068	0.8	9.01E+13	
LTO TOTAL (kg, mg, number of particles)			252	564	2.54E+16	-
NUMBER OF ENGINES				1	1	1
NUMBER OF TESTS				3	3	3
AVERAGE LTO/F_{oo} VALUES (mg/kN, particles/kN)				6.1	2.74E+14	-
MAX EI VALUES (mg/kg, particles/kg) AND MAX MASS CONC.($\mu g/m^3$)				8.1	1.87E+14	192

** Emissions Indices are corrected for thermophoretic loss and fuel hydrogen content*

DATA FOR EMISSIONS INVENTORIES (ESTIMATIONS FOR ENGINE EXIT PLANE VALUES)

MODE	POWER SETTING ($\%F_{oo}$)	CORRECTED EMISSIONS INDICES EI_{mass_SL} (mg/kg)	EI_{num_SL} (particles/kg)
TAKE-OFF	100	10.9	8.76E+14
CLIMB OUT	85	5.5	8.34E+14
APPROACH	30	0.2	7.90E+13
IDLE	7	1.5	7.87E+14

AMBIENT CONDITIONS

	From	To
BAROMETER (kPa)	102.0	103.3
TEMPERATURE (K)	272.0	278.1
HUMIDITY (kg water/kg dry air)	0.0012	0.0022

FUEL

HEAT OF COMBUSTION (MJ/kg)	43.21
HYDROGEN CONTENT (%mass)	13.98
AROMATICS CONTENT (%vol)	18.1
NAPHTHALENE CONTENT(%vol)	0.78
SULPHUR CONTENT (ppm by mass)	553

MANUFACTURER:	Pratt & Whitney
TEST ORGANIZATION:	Pratt & Whitney
TEST LOCATION:	Mirabel Aerospace Centre - Quebec
TEST DATES:	25/03/2018-26/03/2018

REMARKS

1. Data from certification report PWA-12249
2. Block C combustor
3. nvPM levels in accordance with Annex 16 Vol. II, Chapter 4, Appendix 7 and Appendix 8.
4. Data revised: nvPM EImass_SL corrected